

**STATE FOREST LAND
ENVIRONMENTAL CHECKLIST**

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at <http://www.dnr.wa.gov> under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

Timber Sale Name: LUNAR HARDWOODS

Agreement #: 30-084368

2. Name of applicant:

Washington State Department of Natural Resources

3. Address and phone number of applicant and contact person:

Washington State Department of Natural Resources
Pacific Cascade Region
601 Bond Road
P.O. Box 280
Castle Rock, WA 98611-0280
Phone: (360) 577-2025
Contact Person: Robert W. Johnson

4. Date checklist prepared: 03/18/2009

5. Agency requesting checklist:

Washington State Department of Natural Resources

6. Proposed timing or schedule (including phasing, if applicable):

Auction Date: 12/17/2009
Expiration Date: 10/31/2011

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
No.

Timber Sale

- a. *Site preparation:*

Slash will be piled and burned as needed. Aerial and ground herbicide application may be done to minimize competition with regeneration.

- b. *Regeneration Method:*

Harvest units will be hand planted with seedlings and some natural regeneration may occur. Units will be planted at a rate that meets or exceeds Forest Practices standards.

- c. *Vegetation Management:*

Vegetation management needs may be assessed from plantation ages three to eight. Vegetation control activities will occur as needed.

- d. *Thinning:*

- d. Thinning:
Pre-commercial thinning needs may be assessed at approximately 15 years of age for conifer species.

Roads: Roads remaining at the termination of the sale will be used for future management activities as necessary. Road maintenance and periodic ditch and culvert cleanout will occur as necessary.

Rock Pits and/or Sale: The existing P&E Ridge Pit, P&E Extension Pit, and the Squally Jim Pit (T13N, R07W, S23) will provide rock for this proposed sale. These quarries may be used as a rock source for future road construction, reconstruction, and maintenance as needed for management of DNR lands.

Other: Firewood permits for the sale area may be issued to the public after timber harvest activities are completed.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☒ 303 (d) – listed water body in WAU: ☒ temp ☐ sediment ☐ completed TMDL (total maximum daily load):

The map dated 2008 provided by DOE at their web site (<http://apps.ecy.wa.gov/wqawa/viewer.htm>) displays 303(d) listed waters for the Willapa Headwaters WAU. The 2004 SEPA maps associated with this proposal do not match the 2008 information. The streams associated with this proposal do not flow into any of the 303d listed waters and consequently will not impact the 303d listed waters.

☐ Landscape plan:

☒ Watershed analysis: Willapa Headwaters Watershed Analysis, available at the Pacific Cascade region office.

☐ Interdisciplinary team (ID Team) report:

☒ Road design plan: Available at Pacific Cascade region office.

☐ Wildlife report:

☐ Geotechnical report:

☐ Other specialist report(s):

☐ Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):

☒ Rock pit plan: Available at Pacific Cascade region office.

☒ Other: Information was gathered from the State Soil Survey, GIS maps that display water types, rain on snow areas, and areas of potential mass wasting and erosion; WAU 2000 layer, Planning and Tracking reports; Policy For Sustainable Forests (PSF) dated December 2006; Washington State Department of Natural Resources Habitat Conservation Plan (HCP) dated September 1997; South Coast Planning Unit Marbled Murrelet Habitat Reclassification Map, dated November 1999; and ESA listed Salmonid Species Map from Forest Practices, dated 1999. Available at Pacific Cascade Region Office.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None Known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒ HPA ☒ Burning permit ☐ Shoreline permit ☒ Incidental take permit 1168 and PRT8125121 ☒ FPA#2919786 ☐ Other:

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Lunar Hardwood is a four unit timber sale. The units are located in the southern portion of the Washington Department of Natural Resources' P&E Forest management block in Pacific County, in sections 21, 22, & 27 of T13N R07W, W.M. The proposed sale is within the Willapa Headwaters WAU. Elevations range from 400 ft to 1080 ft. The total proposed area of this sale is 195 acres. The total harvest area is 164 acres with an estimated 2.2 MMBF in U-1, 2.5 MMBF in U-2, 475 MBF in U-3, and 2.5 MMBF in U-4.

Unit	Proposal Acres	RMZ/WMZ Acres	Unstable Slope Acres	Existing Road Acres	Sale Acres	Leave Tree Clump Acres	Internal Road R/W Acres	Harvest Acres
name	gross			within unit	*8=leave trees	clumped acres	for thins	net
1	50	5			45	2	N/A	43
2	65				65	4	N/A	61
3	18	3			15	.25	N/A	15
4	62	14			48	3		45
Totals	195	22			173	9		164

- b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Unit Descriptions:

Unit one is a 43 acre variable retention harvest. This unit consists of a 61 year old mixed stand of mature Douglas-fir and red alder with a few scattered western red cedar, Sitka spruce, and western hemlock. The understory consists of vine maple. The forest floor consists of swordfern, salmonberry, and devil's club.

Unit two is a 61 acre variable retention harvest. This unit consists of a 61 year old stand with mature red alder with a few scattered Douglas-fir, western red cedar, western hemlock, and bigleaf maple. The understory consists of cascara and vine maple. The forest floor consists of swordfern, salmonberry and devil's club.

Unit three is a 15 acre variable retention harvest. This unit consists of a 61 year old stand of mature red alder with a very few scattered Douglas-fir, western hemlock, western red cedar, and Sitka spruce. The understory consists of cascara and vine maple. The forest floor consists of salmonberry, devil's club and swordfern.

Unit four is 45 acre variable retention harvest. This unit consists of a 72 year old stand of mature red alder with a very few scattered Douglas-fir, western hemlock, western red cedar, and Sitka spruce. The understory consists of cascara and vine maple. The forest floor consists of salmonberry, devil's club and swordfern.

Overall Unit Objectives:

- 1) The primary objective of this timber sale is to provide financial benefit to the trust beneficiaries and regenerate a

- 2) Comply with internal procedures derived from the Forest Practices rules, Policy for Sustainable Forests, and the Habitat Conservation Plan.
- 3) Maintain water quality and fish habitat, retain legacy trees, and minimize impacts to soils.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		6662	3	
Reconstruction				
Abandonment				
Bridge Install/Replace				
Culvert Install/Replace (fish)				
Culvert Install/Replace (no fish)				

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. (See timber sale map available at DNR region office, and/or color landscape/WAU map on the DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

a. Legal description:

T13N R7W S16
T13N R7W S21
T13N R7W S22
T13N R7W S27

b. Distance and direction from nearest town (include road names):

The proposed sale is approximately 7 miles from Menlo, WA. From Highway 6 in Menlo, take Green Creek Road to proposal area.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website <http://www.dnr.wa.gov> under "SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
WILLAPA HEADWATERS	62849.6	195
Sub-Basin	Sub Acres	Proposal Acres
2	2,319	185
4	1,740	5
7	1,477	5

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website <http://www.dnr.wa.gov> under "SEPA Center" for a broader landscape perspective.)

Willapa Headwaters WAU:

This proposal is located in the Willapa Headwaters WAU. Agriculture and home sites are located in the valleys near the major streams, with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low to mid elevations. The uplands are mainly managed for timber production. Ownership includes large industrial forests, small private forests, and DNR managed forests. Forested stands within the WAU appear to be almost exclusively second and third growth stands. The numbers of future and past expiration date Forest Practices shown on the WAU maps (referenced above on the DNR website) along with observations within the WAU indicate that the timber stands are intensely managed. Management includes regeneration harvests, thinnings, partial cuts, reforestation, and young stand management including herbicides and manual methods.

The following tables are an estimated summary of past and future activity on DNR-managed land and privately managed land in the WAUs (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level. The nearest recent timber harvest within the vicinity of the

Willapa Headwaters WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	19104	852	385	1708	1163
PRIVATE OWNERSHIP	43779	5883	855	UNKNOWN	UNKNOWN
TOTAL	62883	6735	1240	1708	1163

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

- 1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).

Willapa Headwaters:

The Willapa Headwaters WAU, located at an elevation range of 64 to 2814 feet, has topography characterized as rolling with deep "V" shaped draws at higher elevations. The WAU averages 70 – 120 inches of rain per year, which supports a dominant western hemlock timber type in the western portion of the WAU, while a Douglas-fir timber type becomes more dominant in the eastern portion.

These sub-basins are similar to the descriptions for the WAU.

- 2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).

The four units in this timber sale are very similar to their respective WAU.

- c. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the site is approximately 65%

- c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
1936	SILT LOAM	8-30	56	LOW	MEDIUM
7619	GRAVELLY SILT LOAM	5-30	47	INSIGNIFICANT	MEDIUM
0663	SILT LOAM	8-30	34	INSIGNIFICANT	LOW
1934	SILT LOAM	1-8	27	INSIGNIFICANT	MEDIUM
3849	V.COBBLY LOAM	5-30	25	LOW	LOW
0577	SILT LOAM	8-30	6	INSIGNIFICANT	MEDIUM

Steeper slopes than those indicated by the soils survey are found on the proposal area, but are generally small and isolated in nature.

- d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

- 1) Surface indications:

There are indications of unstable slopes in the vicinity of the sale area. There are minor surface indications of unstable slopes adjacent to the sale area. These include over-steepened stream banks with exposed mineral soils, and steep slopes between 60-65%. Most stream banks are outside the harvest area or within RMZs.

- 2) Is there evidence of natural slope failures in the sub-basin(s)?

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

No unstable features were identified within the sale boundaries. There are indicators of shallow slope failures in several places in the sub-basins. These are generally associated with slopes greater than 65%. They are found most commonly within the RMZs along the toe slopes of the main draws, within hollows that extend as far up as mid-slope, and/or within headwalls at the top of the steeper draws. Shallow slumps have been observed down along the larger streams, typical of other known slumps in these WAUs identified in the watershed analysis as being associated with "strong seismic shaking". According to the mass wasting assessment these areas are stable in their present configuration.

- 3) Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?

☐No ☒Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:

Associated management activity:

Within the sub-basins, shallow-rapid side cast failures associated with roads have occurred, mostly where roads were constructed prior to the Forest Practices Act and where roads are located mid-slope on steep slopes.

- 4) Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?

☒No ☐Yes, describe similarities between the conditions and activities on these sites:

No indicators of potentially unstable slopes were observed within the harvest units.

- 5) Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.

The RMZs averaging 200 feet wide will protect the area adjacent to and within type 3 streams, and a minimum RMZ of 100 feet wide will protect type 4 streams from soil disturbance. RMZs will serve to retain root strength, canopy cover and LWD recruitment. Roads were located on ridgetops to minimize disturbance to type 5 stream headwall areas. Ground disturbance will be minimized by limiting the operation of ground based harvesting equipment to slopes less than 35% and by requiring lead end suspension on cable settings. Where possible, leave trees were clumped in headwall areas. Cross drains and ditch-outs will be installed on new road construction.

- e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Approx. acreage new roads:3 Approx. acreage new landings:1 Fill source:

- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Minimal erosion may occur as the result of road construction, road use, and logging operations, but following current DNR construction standards the amount and severity should be greatly reduced.

- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? Approximate percent of proposal in permanent road running surface (includes gravel roads):

Approximately 1% of the sale area will be on impervious surfaces (gravel roads/landings).

- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

Measures to reduce erosion on roads or during active road construction

- Seasonal timing restrictions for road construction from September 30th to May 1st to reduce activities during wet weather conditions, unless authorized by the Contract Administrator.
- Soils exposed during road construction may be grass seeded.
- Roads will either be crowned, ditched, and cross-drained; or out-sloped.
- Cross drains will be installed properly and maintained.
- Sediment delivery will be addressed as needed during operations and may include the use of water bars or silt traps.
- There will be periodic maintenance and inspection of the road system to insure proper drainage.

Measures to reduce erosion during active logging operation:

- Timber shall be felled and yarded away from all type 3 and type 4 streams.
- Ground based yarding will be restricted to slopes less than 35% and during dry soil conditions only.
- The lead-end of logs will be suspended during all yarding operations.
- The potential for sediment delivery will be addressed as needed during operations and may include the use of water bars or silt traps.

2. Air

- a. What types of emissions to the air would result from the proposal (i.e., dust from truck traffic, rock mining, crushing or hauling, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.
No emissions are anticipated other than minor amounts of heavy equipment exhaust, road dust created by harvest hauling, and smoke created from burning landings, which will be done in accordance with the State's Smoke Management Program.
- b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
No.
- c. Proposed measures to reduce or control emissions or other impacts to air, if any:
Slash pile burning may be done in the fall during the rainy season under the direction of the State's Smoke Management Program. A burn permit will be obtained before burning begins.

3. Water

- a. Surface:

- 1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. (See timber sale map available at DNR region office, or forest practice application base maps.)
- a) *Downstream water bodies:*
Unit 1: The type 5 headwaters to Walker creek turn into a type 4 outside of the sale area. Walker Creek turns into a type 3 that flows into the Willapa River. An unnamed Type 5 stream runs into a type 3 stream that flows into another unnamed type 3 stream which flows into Walker Creek. Walker Creek flows into the Willapa River.
Unit 2: The unnamed type 5 streams flow into an unnamed type 3 stream that flows into Walker creek. Walker Creek flows into the Willapa River.
Unit 3 and Unit 4: the unnamed type 5 streams flow into an unnamed type 3 stream which flows into another unnamed type 3 stream. This unnamed type 3 stream flows into Walker Creek which flows into the Willapa River.

- b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Unnamed stream	3	3	200
Unnamed stream	4	2	100
Walker creek	5	1	
Unnamed stream	5	14	

- c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.
RMZs for this proposal have been designed in accordance with the Department of Natural Resources' current procedures. RMZs averaging 200 feet were placed along the type 3 streams. A minimum RMZ measuring 100 feet wide were placed along the type 4 streams. All buffers were measured from the 100-year flood plain. No wind buffers were applied because the major soils within the proposal area have low windthrow potential. The RMZs are comprised primarily of Douglas-fir, western hemlock and red alder with some Sitka spruce, western red cedar, and bigleaf maple. A 30-foot wide equipment limitation zone will protect type 5 streams associated with the proposal.

- 2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐ No ☒ Yes (See RMZ/WMZ table above and timber sale map available at DNR region office.)
Description (include culverts):
Cable lines may be hung over streams associated with this proposal. Timber may be felled, and yarded, across some type 5 streams.

- 3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
None.
- 4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. (Include diversions for fish-passage culvert installation.)
☒ No ☐ Yes, description:
- 5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒ No ☐ Yes, describe location:
- 6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☐ No ☒ Yes, type and volume:
Minor amounts of logging slash may enter the type 5 streams.
- 7) Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?
Yes, the sub-basins contain soils susceptible to surface erosion. Material may enter the streams during moderate to high flows and can be observed as a noticeable increase in stream turbidity. The increased turbidity can be observed in streams originating in mature stands with no forest practice activity. The potential for eroded material to enter surface water based on this proposal is low due to the erosion control measures being included in the proposal (see B.1.h.).
- 8) Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?
☐ No ☒ Yes, describe changes and possible causes:
There is evidence of surface erosion and small localized mass wasting in various portions of the sub-basins. Elevated streambeds attributed to accelerated aggradations of sediment in the channels are the main indicator of channel changes in the sub-basins. There is also a general decrease in the amount of large woody debris (LWD) in streams that were not buffered during past harvest activities due to a decrease in recruitment of LWD and the natural decay process of LWD. Where the stream banks erode, the channels may change dimension and/or direction over time.
- 9) Could this proposal affect water quality based on the answers to the questions 1-8 above?
☐ No ☒ Yes, explain:
This proposal is expected to have minimal to no effect on water quality. Items listed in B.1.h and B.3.d will minimize potential sediment delivery to streams. These mitigation elements should limit affects on water quality in relation to the items of concern listed in questions 1-8.
- 10) What are the approximate road miles per square mile in the WAU and sub-basin(s)?
The Willapa Headwaters WAU averages 5.1 road miles per square mile. The road miles per square mile in the sub-basins are similar.

Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒ No ☐ Yes, describe:
- 11) Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.
☒ No ☐ Yes, approximate percent of WAU in significant ROS zone.
Approximate percent of sub-basin(s):
- 12) If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?
- 13) Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?
☐ No ☒ Yes, describe observations:
The shallow slope failures described in B.1.d.2. above can result in accelerated sediment aggradations. Lack of LWD can contribute to stream channelization during peak flow events. Some inner gorge and steep headwall areas could potentially fail during heavy rainfall events.
- 14) Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.
This proposal may slightly change the timing, duration, and amount of water in a peak flow event. Flow rates may increase slightly due to decreased transpiration and interception. However, the location of the units, the size of the units, and the fact there has been moderate logging in this area over the past ten years, all contribute to reducing peak flow problems. Leave trees scattered and clumped throughout the units at 8 trees per acre help maintain water quality and reduce peak flow. Policies limiting maximum harvest unit size should also limit contributions to peak flow problems.
- 15) Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?
☒ No ☐ Yes, possible impacts:
- 16) Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.

The following are protection measures addressing peak flow/flooding impacts:

- Designating RMZs averaging 200 feet wide adjacent to the type 3 streams.
- A minimum of 100 feet wide RMZ's adjacent to type 4 streams, and an Equipment Limitation Zone on the type 5 streams.
- Follow the Policy for Sustainable Forest, Policy on Watershed Systems, and Forest Practices rules regarding green-up.
- Retaining 8 leave tree acres to intercept precipitation and provide transpiration to moderate increases in soil moisture content; designating living leave trees to maintain soil strength from tree roots during periods of increased precipitation and soil moisture content.

b. Ground Water:

- 1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.
No.
- 2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
Insignificant amounts of oil and other lubricants may be inadvertently leaked as a result of heavy equipment use. No lubricants will be disposed of on site, and any leaks will be cleaned up.
- 3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☒ **No** ☐ **Yes, describe:**
This proposal is not expected to have any effect on groundwater.
 - a) *Note protection measures, if any.*
See B-3-a-16

c. Water Runoff (including storm water):

- 1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.
Storm water runoff from roads and intercepted subsurface flow will be collected by road ditches and ditch-outs and diverted onto the forest floor. Ditch-outs will be placed to minimize the amount of ditch water directly entering existing stream channels.
- 2) Could waste materials enter ground or surface waters? If so, generally describe.
Some logging slash may enter the type 5 streams.
 - a) *Note protection measures, if any.*
Equipment use will be limited along streams in accordance with Forest Practice rules. No lubricants will be disposed of onsite. See 3.a.1.c.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, and B-3-c-2-a.)

4. Plants

a. Check or circle types of vegetation found on the site:

- ☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐cottonwood, ☐western larch, ☐birch, ☐other:
☒evergreen tree: ☒Douglas fir, ☐grand fir, ☐Pacific silver fir, ☐ponderosa pine, ☐lodgepole pine,
☐western hemlock, ☐mountain hemlock, ☐Englemann spruce, ☒Sitka spruce,
☐red cedar, ☐yellow cedar, ☐other:
☒shrubs: ☒huckleberry, ☒salmonberry, ☐salal, ☒other: swordfern
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒devil's club, ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐plant communities of concern:

b. What kind and amount of vegetation will be removed or altered? (See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)

- 1) *Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: <http://www.dnr.wa.gov> under "SEPA Center.")*
Unit 1 is surrounded by state land. The north side of unit 1 is bordered by 24 year-old Douglas-fir reprod. The east is bordered by 12 year-old Douglas-fir reprod. The south is bordered by mature Douglas-fir. The west is bordered by 20 year-old Douglas-fir reprod.
Unit 2 is surrounded by state land. The north side of unit 2 is bordered by 24 year-old Douglas-fir reprod. The east is bordered by 7 year-old Douglas-fir reprod. The south is bordered by 17 year-old Douglas-fir reprod. The west is bordered by 12 year-old Douglas-fir reprod.
Unit 3 surrounded by state land. The north side of unit 3 is bordered by a 25 acre 2 year-old Douglas-fir reprod stand. The east is bordered by 17 year-old Douglas-fir reprod. The south is bordered by 6 year-old Douglas-fir reprod. The west is bordered by 17 year-old Douglas-fir reprod.

Unit 4 surrounded by state land. The north side of unit 4 is bordered by 17 year-old Douglas-fir reprod. The east and south are bordered by 21 year-old Douglas-fir reprod. The west is bordered by 6 year-old Douglas-fir reprod.

2) *Retention tree plan:*

Eight leave trees per acre were marked in Unit 1. Retention trees were mostly marked in clumps throughout the unit. Where appropriate, some individual large and structurally unique trees were selected and marked as leave trees.

Eight leave trees per acre were marked in Unit 2. Retention trees were mostly marked in clumps throughout the unit. Where appropriate, some individual large and structurally unique trees were selected and marked as leave trees.

Eight leave trees per acre were marked in Unit 3. Retention trees were mostly scattered throughout the unit.

Eight leave trees per acre were marked in Unit 4. Retention trees were mostly marked in clumps throughout the unit. Where appropriate, some individual large and structurally unique trees were selected and marked as leave trees.

Clumped leave tree areas are bounded out with "leave tree area" tags and pink flagging. Scattered leave trees are banded with blue paint and spot marks. When possible, Douglas-fir, Sitka spruce, and western red cedar with broken or deformed tops were chosen as leave trees to increase chances of wildlife use and future snag recruitment. The clumps are located throughout the harvest units.

- c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

- d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will remain on site and will thrive within the new plantations, which will be established with native Pacific Northwest conifer species as well as red alder within one year after harvest completion in all four units. Some of the older trees on site will be left as wildlife trees to provide older forest characteristics.

5. **Animal**

- a. Circle or check any birds animals or unique habitats which have been observed on or near the site or are known to be on or near the site:

birds: ☒hawk, ☐heron, ☐eagle, ☒songbirds, ☐pigeon, ☐other:
mammals: ☒deer, ☒bear, ☒elk, ☒beaver, ☐other:
fish: ☐bass, ☐salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐talus slopes, ☐caves, ☐cliffs, ☐oak woodlands, ☐balds, ☐mineral springs

- b. List any threatened or endangered species known to be on or near the site (include federal- and state-listed species).

TSU Number	FMU ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

- c. Is the site part of a migration route? If so, explain.

☒Pacific flyway ☐Other migration route: Explain if any boxes checked:

This proposal is located in the Pacific flyway, which is part of the Pacific Northwest forests. Although migratory waterfowl use the Pacific flyway; the area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl. Many neotropical birds are closely associated with riparian areas, cliffs, snags and structurally unique trees in these forests. Riparian areas and special habitats are protected through implementation of DNR's Habitat Conservation Plan.

- d. Proposed measures to preserve or enhance wildlife, if any:

By designing this sale to comply with the Department's HCP, both wildlife and wildlife habitat will be preserved and enhanced. The unit design is conducive to ungulate feeding patterns. Scattered and clumped leave trees are favorable to raptor perching, feeding, and nesting. Well-engineered and constructed roads reduce potential water quality impacts for down stream fish populations. Grass seeding exposed soils protects water quality and provides forage. Large diameter leave trees will enhance the wildlife habitat value of the future stand.

- 1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.
Species /Habitat: Riparian dependent species Protection Measures: RMZs averaging 200 feet wide on type 3 streams and a minimum 100 foot wide buffer on type 4 streams.

Species /Habitat: Upland dependent species Protection Measures: Eight leave trees per acre will be left clumped and scattered throughout Units 1, 2, 3, and 4.

6. **Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

- b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

- c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
Does not apply.

7. **Environmental Health**

- a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
Minimal hazard incidental to operating heavy machinery. There is the possibility of a fire starting during the operating period, especially during fire season.
- 1) Describe special emergency services that might be required.
Forest fire suppression(during fire season), hazardous waste cleanup.
- 2) Proposed measures to reduce or control environmental health hazards, if any:
Clean up materials will be kept on site during the harvest operations. Risk of fire spreading will be reduced by having a pump truck or trailer on site during logging operations that take place within fire season, and burning landings during the fall under cooler, wetter, conditions, subject to a written burning permit.
- b. Noise
- 1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
None.
- 2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.
Log trucks will be using forest roads, county roads and SR 6. This is a normal activity for this area, and is consistent with existing traffic. Noise from on site logging equipment will be increased during daylight hours when operations are conducted.
- 3) Proposed measures to reduce or control noise impacts, if any:
None.

8. **Land and Shoreline Use**

- a. What is the current use of the site and adjacent properties? (Site includes the complete proposal, e.g. rock pits and access roads.)
Timber production, forest land management, and agricultural.
- b. Has the site been used for agriculture? If so, describe.
No.
- c. Describe any structures on the site.
None.
- d. Will any structures be demolished? If so, what?
No.
- e. What is the current zoning classification of the site?
No zoning for this area at this time.
- f. What is the current comprehensive plan designation of the site?
The comprehensive plan designation is: resource lands, forest of long-term significance.
- g. If applicable, what is the current shoreline master program designation of the site?
Not applicable.
- h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
No.
- i. Approximately how many people would reside or work in the completed project?
Does not apply.
- j. Approximately how many people would the completed project displace?
None.
- k. Proposed measures to avoid or reduce displacement impacts, if any:
None.
- l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
This proposal is consistent with the designated forest land classification by Pacific County under the Growth Management Act, Policy for Sustainable Forests, and the Habitat Conservation Plan (1997).

9. **Housing**

- a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
None.
- b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None.

- c. Proposed measures to reduce or control housing impacts, if any:
None.

10. Aesthetics

- a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?
Not applicable
- b. What views in the immediate vicinity would be altered or obstructed?
Views from forest roads will be expanded.
- 1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☐ No ☒ Yes, viewing location:
Lebam, Wa
- 2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☐ No ☒ Yes, scenic corridor name:
State Route 6
- 3) How will this proposal affect any views described in 1) or 2) above?
Since the majority of the landscape in this area is used for timber production (public & private), the outcome of this proposal will generally blend in with the surrounding landscape. In addition, the retention tree plan discussed in 4.B.2 will aid in mitigating the visual effects of the regeneration harvest.
- c. Proposed measures to reduce or control aesthetic impacts, if any:
In addition to the Riparian Management Zones being retained, 8 trees per acre were identified on site and will provide a mature forested component to the landscape aesthetics.

11. Light and Glare

- a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
None.
- b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.
- c. What existing off-site sources of light or glare may affect your proposal?
Does not apply.
- d. Proposed measures to reduce or control light and glare impacts, if any:
None.

12. Recreation

- a. What designated and informal recreational opportunities are in the immediate vicinity?
Hunting, berry picking, and other informal recreation activities.
- b. Would the proposed project displace any existing recreational uses? If so, describe:
No. However, recreational uses may be altered and/or limited during operations.
- c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None.

13. Historic and Cultural Preservation

- a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
No.
- b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
Historic/Archaeological resources were reviewed by a Region Cultural Resources Technician. The report is available at the Pacific Cascade Region office.
- c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)
This proposal was screened for potential archaeological sites or artifacts using the P&T special concerns report and the state upland viewing tool during the pre-sales phase, where no evidence of sites was discovered during field visits. The department archeologist was consulted as part of the proposal. In the event that any unknown archaeological resources are encountered, ground disturbing activities would be halted and our Agency Archaeologist contacted to survey the site and develop a Site Protection Plan.

14. Transportation

- a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
Forest roads lead to State Route 6, which links the I-5 corridor to the west coast.
- 1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?
No.
- b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

- c. How many parking spaces would the completed project have? How many would the project eliminate?
Does not apply.
- d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
New construction of approximately 6,662 feet of gravel logging roads. See A.11.
- 1) *How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?*
This proposal does not significantly affect the current transportation system or traffic circulation.
- e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.
- f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
Approximately 15 vehicular trips per day will be generated during harvest operations. On completion of this proposal, some vehicle trips will be required to burn slash piles on landings and reforest the area. After that, the proposal will generate less than five trips per year, except for forest management activities.
- g. Proposed measures to reduce or control transportation impacts, if any:
None are planned.

15. Public Services

- a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
No.
- b. Proposed measures to reduce or control direct impacts on public services, if any.
None.

16. Utilities

- a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
None.
- b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Not applicable.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Jeremy Homer **FORESTER I** Date: 04-09-2009
Title
Reviewed by: Robert W. Johnson **PRODUCT SALES MANAGER** Date: 6-26-09
Title
Comments: _____